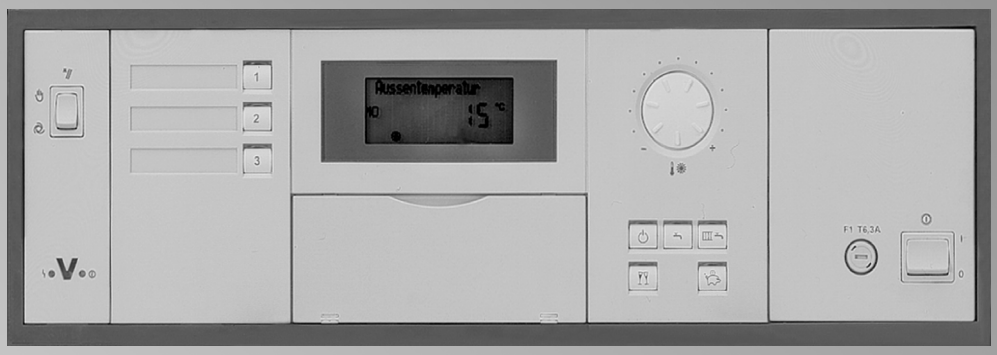
Operating Instructions and User's Information Manual

VIESMANN

Please file in Service Binder

Vitocontrol-S, VD2/CT3/CM2, Model 300-K, MW1
Outdoor-reset logic digital cascade control

VITOCONTROL-S, VD2/CT3/CM2



C SA® US

Certified as a component part of Viessmann boilers only

5351 341 v1.2 05/2012

For your safety

Please follow these safety instructions closely to avoid the risk of injury to persons and damage to property.

If you smell gas
- Don't smoke! Don't use naked flames or cause sparks (e.g. by switching lights or electrical appliances on and off)
- Open windows and doors
- Close the gas shut-off valve
- Inform your heating engineers/service contractors from outside the building
- Observe the safety regulations of your gas supply company (see gas meter) and those of your heating engineers (see start-up or instruction report).

In emergencies
- Immediately switch off the power supply, e.g. at the separate fuse or power supply disconnect switch (unless there is a smell of gas).
- Close the shut-off valves in the oil pipes or close the gas shut-off valve, whichever applicable.
- Use suitable extinguishers in the event of fire.

Work on the equipment
Installation, initial start-up, maintenance and repairs must be carried out by a competent person (heating engineer/ service contractor).

Before work is undertaken on the equipment/heating system, switch off the power supply voltage (e.g. at the separate fuse or power supply electrical isolator switch) and take steps to prevent it from being switched on again.

Gas-fired systems: Also close the gas shut-off valve and make secure to prevent unauthorized use.

Installation of additional components
The installation of additional components which have not been tested together with the boiler can adversely affect the function and performance of the boiler.
Our warranty does not cover and we accept no liability for damage attributable to the installation of such components.

Boiler room conditions
- Do not use a room in which the air is polluted by halogenated hydro-carbons (e.g. as contained in aerosols, paints, solvents and cleaning agents)
- Do not use a room subject to high levels of dust
- Do not use a room subject to permanently high humidity
- The room should be frost-protected
- Max. ambient temperature 35 °C/ 95 °F.
- Provide good ventilation and do not close or obstruct vents (if installed).

This symbol indicates a reference to other instructions which must be observed.

Multi-boiler system

This header denotes special instructions which apply to the use of the Vitotronic 100, GC1 in a multi-boiler system.

The main controls

The settings required for operating your heating system are made on the Vitotronic 100, GC1 of each boiler and on the Vitocontrol-S, VD2/CT3/CM2.

If you system is equipped with remote controls, you can also use the remote controls for some of the settings

See operating instructions for the remote control

The control unit is behind the hinged cover. The hinged cover is opened by pulling the top gently downwards towards you.
You must close the hinged cover again after use.

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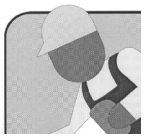
For your safety

Please ensure that this manual is read and understood before commencing installation. Failure to comply with the issues listed below and details printed in this manual can cause **product/property damage**, **severe personal injury**, and/or **loss of life**. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

Licensed professional heating contractor
The installation, adjustment, service, and maintenance of this equipment *must be* performed by a licensed professional heating contractor.

■ *Please see section entitled "Important Regulatory and Installation Requirements."*



Product documentation
Read all applicable documentation before commencing installation. Store documentation near boiler in a readily accessible location for reference in the future by service personnel.

■ *For a listing of applicable literature, please see section entitled "Important Regulatory and Installation Requirements."*

Advice to owner
Once the installation work is complete, the heating contractor must familiarize the system operator/ultimate owner with all equipment, as well as safety precautions/requirements, shut-down procedure, and the need for professional service annually before the heating season begins.

Warranty
Information contained in this and related product documentation must be read and followed. *Failure to do so renders warranty null and void.*

Safety Terminology

The following terms are used throughout this manual to bring attention to the presence of potential hazards or important product information. **Please heed the advice given!**

DANGER
Indicates an imminently hazardous situation which, if not avoided, will result in death, serious injury or substantial product / property damage.

WARNING
Indicates an imminently hazardous situation which, if not avoided, could result in death, serious injury or substantial product / property damage.

CAUTION
Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product / property damage.

IMPORTANT
Helpful hints for installation, operation or maintenance which pertain to the product.

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Safety

Take note of all symbols and notations intended to draw attention to potential hazards or important product information. These include "WARNING," "CAUTION," and "IMPORTANT". See pages 2 and 4 for details.

Approvals
Viessmann boilers, burners and controls are approved for sale in North America by CSA International.

→ *Please carefully read this manual prior to attempting installation. Any warranty is null and void if these instructions are not followed.*

For information regarding other Viessmann System Technology componentry, please reference documentation of the respective product.

We offer frequent installation and service seminars to familiarize our partners with our products. Please inquire.

Codes
The installation of this unit shall be in accordance with local codes. In the absence of local codes, use:
- CSA C22.1 Part 1 and/or local codes in Canada
- National Electrical Code ANSI/NFPA 70 in the U.S.

Always use latest editions of codes.

Working on the equipment
The installation, adjustment, service, and maintenance of this product must be done by a **licensed professional heating contractor** who is qualified and experienced in the installation, service, and maintenance of hot water boilers. There are no user serviceable parts on the boiler, burner, or control.

→ *The completeness and functionality of field supplied electrical controls and components must be verified by the heating contractor. These include low water cut-offs, flow switches (if used), staging controls, pumps, motorized valves, air vents, thermostats, etc.*

Ensure **main power** supply to equipment, the heating system, and all external controls has been **deactivated**. **Close** main **oil or gas supply valve**. Take precautions in both instances to avoid accidental activation of power during service work.

WARNING

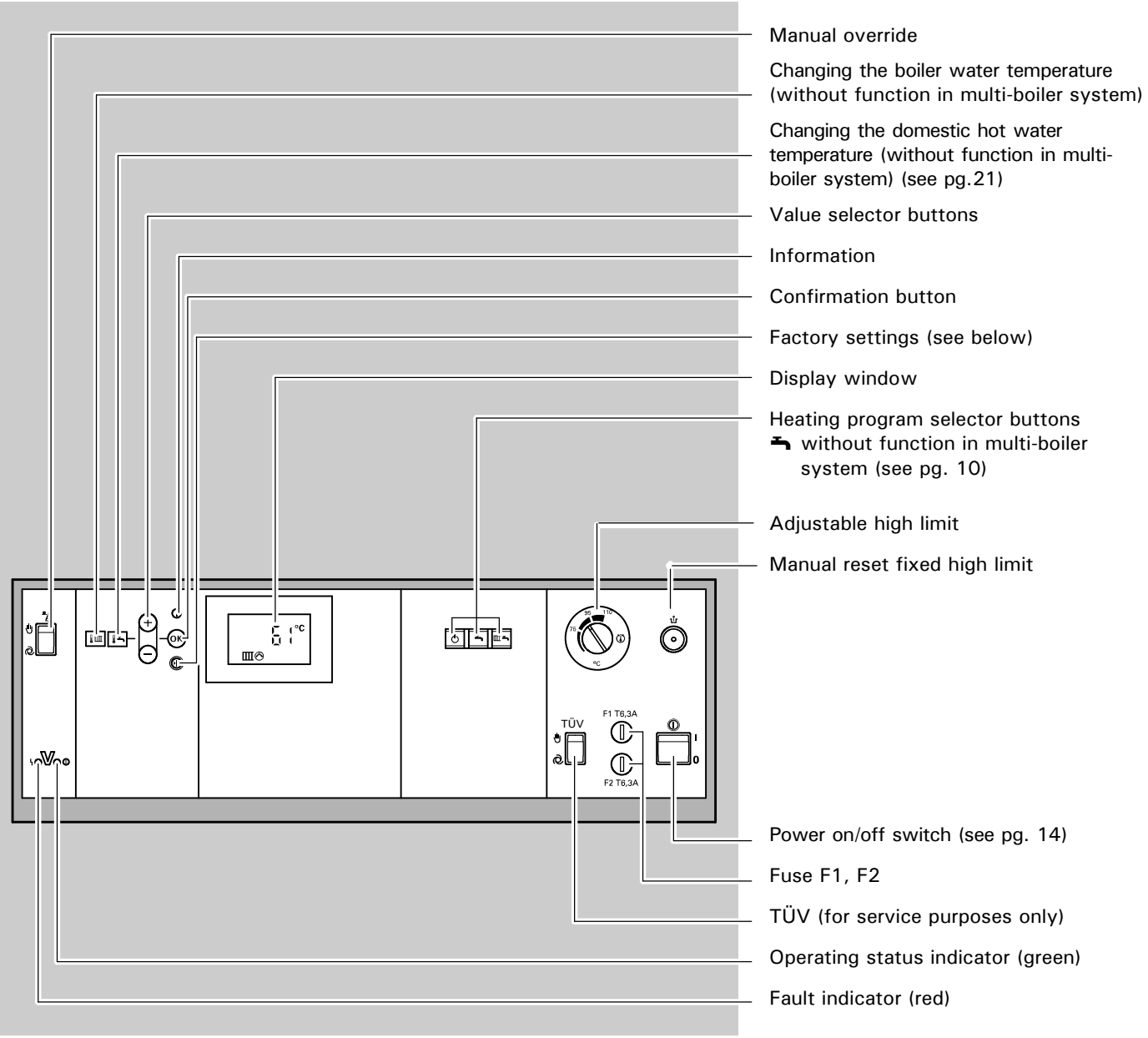
Turn off electric power supply before servicing. Contact with live electric components can cause shock or loss of life.

Technical literature
Literature applicable to all aspects of the Vitocontrol S, VD2/CT3/CM2:
- Technical Data Manual
- Installation Instructions
- Service Instructions
- Operating Instructions
- Instructions of other Viessmann products utilized and installed
- Installation codes mentioned in this manual

→ *Leave all literature at the installation site and advise the system operator/ ultimate owner where the literature can be found. Contact Viessmann for additional copies.*

Overview of controls and indicators

Vitotronic 100, GC1


Manual override
Changing the boiler water temperature (without function in multi-boiler system)
Changing the domestic hot water temperature (without function in multi-boiler system) (see pg.21)
Value selector buttons
Information
Confirmation button
Factory settings (see below)
Display window
Heating program selector buttons without function in multi-boiler system (see pg. 10)
Adjustable high limit
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TÜV (for service purposes only)
Operating status indicator (green)
Fault indicator (red)
TÜV
F1 T6,3A
F2 T6,3A
OK

Factory settings
Press this button to reset all altered values to their factory settings. Please note that all altered values are reset to the factory settings.

Flashing data
Data flashing in the display window means that new settings can be entered.

Other display symbols
(These are not displayed continuously, but appear according to system type and operating status)

- Digital display of the corresponding value
- °C Unit of measurement for temperature values
- h Unit of measurement for display of burner hours run
- Fault message
- Central heating ON
- Displayed when output 20 is activated
- Burner ON
- Domestic hot water heating released
- DHW pump (circulation pump for heating the DHW tank) ON
- ▲ Scan hours run 1st stage burner
- ▲▲ Scan hours run 2nd stage burner
- ▲▲▲ Scan number of burner starts
- ▲▲▲▲ Consumption

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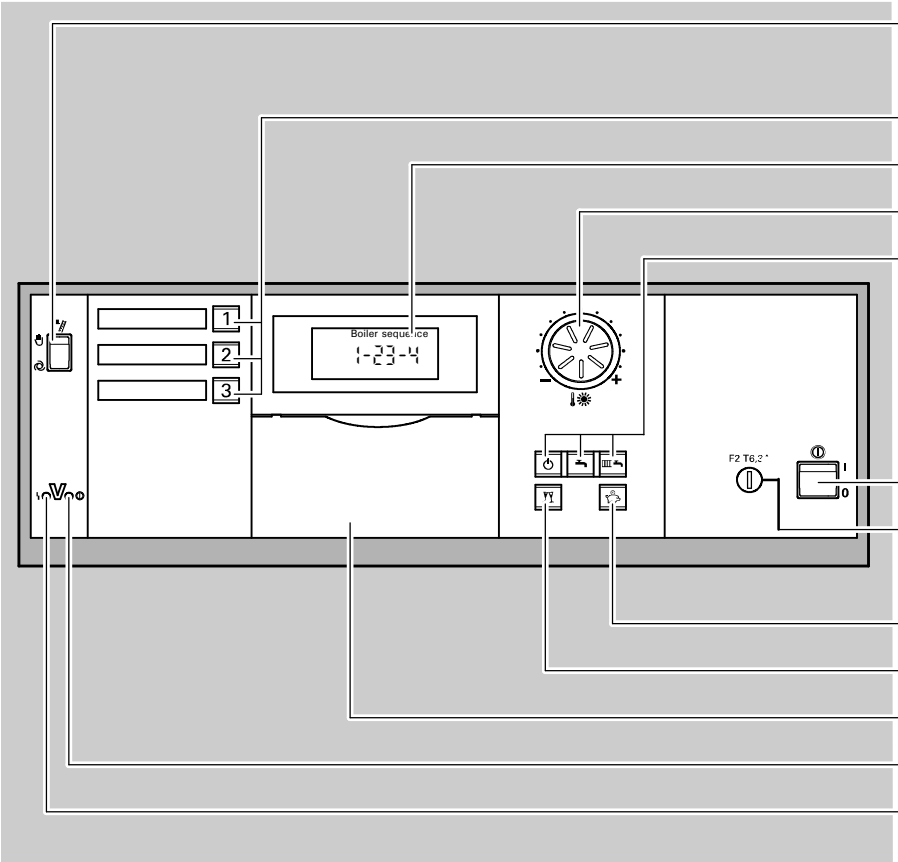
Overview of controls and indicators

Vitocontrol-S, VD2/CT3/CM2



Emissions test switch (see pg. 34)

Heating circuit selector buttons (pg.8)

Display window (pg.8)

Normal room temperature (pg. 11)

Heating programs (pg. 10)

Control on/off switch (pg. 14)

Fuse F1

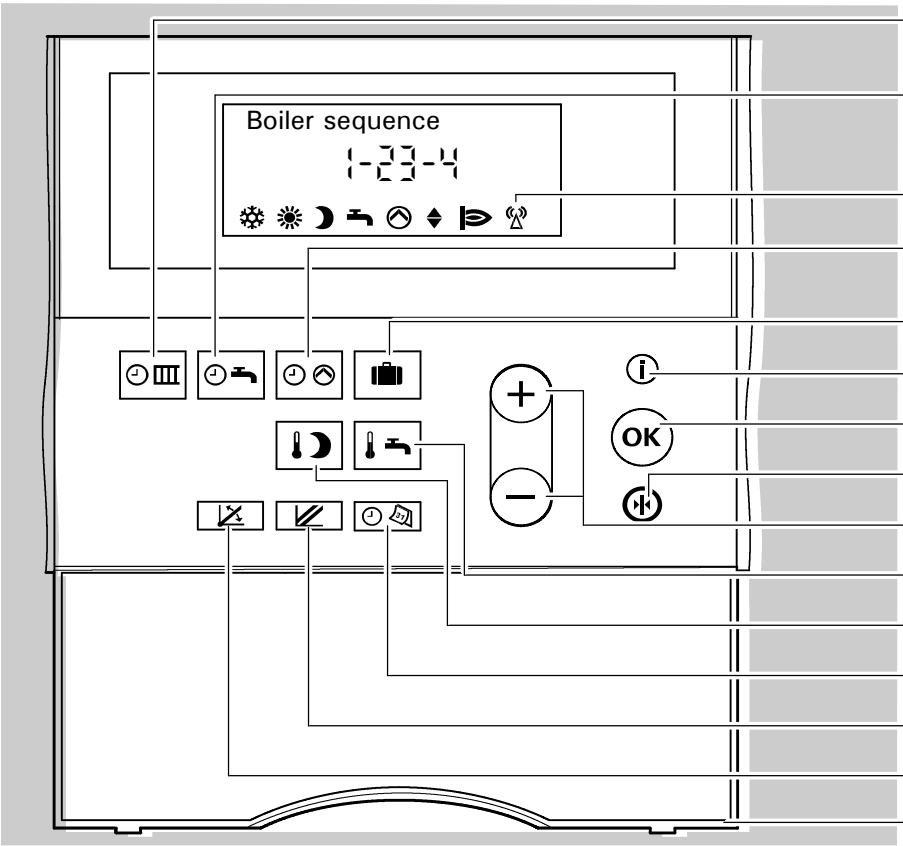
Energy saving mode (pg. 13)

Party mode (pg. 12)

Hinged cover of programming unit

Operating status indicator (green)

Fault indicator (red)



Time program for central heating (pg. 16)

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Time/date

Heating curve shift (pg. 26)

Heating curve slope (pg. 26)

Hinged cover of propgramming unit

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Overview of controls and indicators *(continued)* Vitocontrol-S, VD2/CT3/CM2

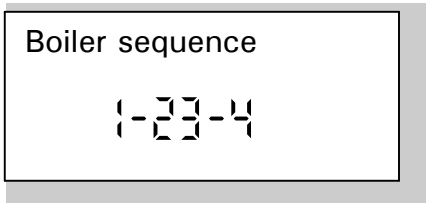
Adjustment of the display window contrast
Open the hinged cover on the programming unit, and press OK and, at the same time, adjust the contrast with the ⊕ or ⊖ button.

Factory settings
Press this button to reset all altered values to their factory settings. Please note that all altered values are reset to the factory settings.

Flashing data
Data flashing in the display window means that new settings can be entered.

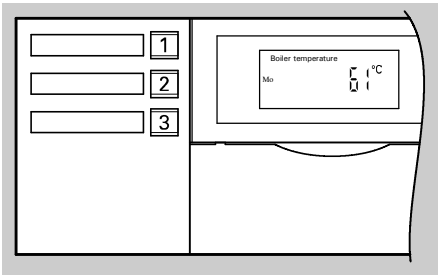
Other display symbols
(These are not displayed continuously, but appear according to system type and operating status)

- Risk of freezing
- Central heating with normal room temperature
- Central heating with reduced room temperature
- Domestic hot water heating, DHW pump ON
- Heating circuit pump ON
- Fault message
- Mixing valve open
- Mixing valve closed



Basic display
The basic display of the Vitocontrol-S, VD2/CT3/CM2 shows the boiler sequence. The display reverts to showing the boiler sequence after each setting is made on the control unit.

Select the heating ciruit - before every setting and scanning operation



On heating systems with only one heating circuit, you can start making all settings immediately.

*On heating systems with **two** or **three** heating circuits, the corresponding heating circuit must be selected before carrying out **each** setting and scanning operation.*
Heating circuit selector button 1: Heating circuit 1 (system circuit)
Heating circuit selector button 2: Heating circuit 2 with mixing valve
Heating circuit selector button 3: Heating circuit 3 with mixing valve

The heating circuits are individually labelled by your heating contractor.

Press 1 or 2 or 3; the following buttons are illuminated:
- the heating circuit selector button
- the current heating program (see page 8)
- the party or energy saving mode, if selected

You can now start making the settings and adjustments for the selected heating circuit.

→ If you have not selected the required heating circuit before starting to carry out the settings, the following instruction appears in the display window:
"First select button 1, 2 or 3."

Please note:
If no further settings are made, the illumination of the buttons is extinguished after a short time.

Your heating system is preset ... Vitocontrol-S, VD2/CT3/CM2

The control units are preset in the factory to a standard operating mode. The heating system, therefore, is ready for operation.
You can change the factory settings to suit your individual preferences.

Vitotronic 100, GC1

- **Heating Program**
  The heating program is set for "Central heating and domestic hot water", i.e. heating takes place, controlled via the Vitocontrol-S, VD2/CT3/CM2.

Vitocontrol-S, VD2/CT3/CM2, Model 300-K MW1

- **Date and time (CET)**
  The date and time are preset in the factory. Resetting for winter/summer time takes place automatically.

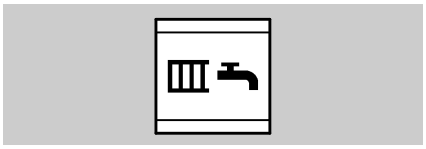
- **Heating program**
  The heating program is set for "Central heating and domestic hot water", i.e. central heating and domestic hot water heating (if a DHW tank is installed) take place, in accordance with the time programs.

- **Time program**
  Between 06:00 and 22:00 hrs, central heating takes place with the normal room temperature and, between 05:30 and 22:00 hrs, domestic hot water heating (if a DHW tank is installed).

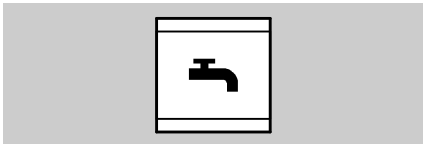
Selecting the heating program (winter, summer)

Vitotronic 100, GC1

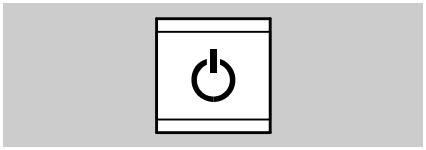
Select the required heating program with the ☰ ⬑, ⬑ or ⏻ button. → *When pressed, the corresponding button is illumintaed*



Central heating and domestic hot water
- The boiler is available to the heating system and is switched on according to demand and in accordance with the boiler sequence
- Frost protection of the boiler



Domestic hot water only
Without function → *The domestic hot water supply is always controlled via the Vitocontrol-S, VD2/CT3/CM2 (see below)*



Standby operation → ***Please note:***
- The boiler is switched off and is no longer availble to the Vitocontrol-S, VD2/CT3/CM2 (i.e. drops out of the boiler sequence)
- Frost protection of the boiler

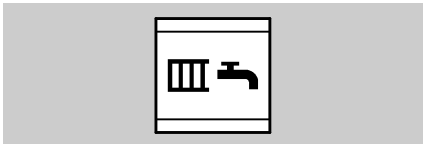
The circulation pump is switched on for a short time every 24 hours to prevent them from seizing up.

Vitocontrol-S, VD2/CT3/CM2, Model 300-K MW1

1. Press the heating circuit selector button; the button is illuminated

→ *The selected heating program appears in the display window for a short time.*

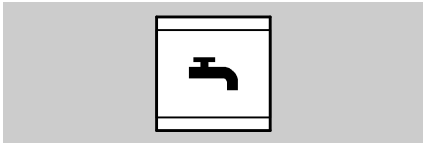
2. Select the heating program with the ☰ ⬑, ⬑ or ⏻ button.



Central heating and domestic hot water → ***Example***
- Central heating with alternating normal and reduced room temperature (frost protection) according to the selected time program.
- Domestic hot water supply (if a DHW cylinder is installed) and DHW circulation pump (if installed) ON according to selected time program
- Frost protection of the DHW cylinder

For the winter transitionary periods.

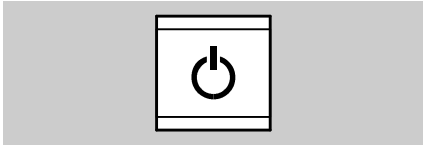
Please note:
When the button is lit, the "☼" symbol appears in the display window during central heating with the normal room temperature; the "☽" symbol is illuminated during central heating with a reduced room temperature higher than 3°C / 37°F



→ ***Example***
For the summer.

Domestic hot water only
- No central heating
- Domestic hot water supply (if a DHW cylinder is installed) and DHW circulation pump (if installed) ON according to selected time program
- Frost protection of the DHW cylinder

Please note:
DHW cylinder is connected, "without function" is displayed.



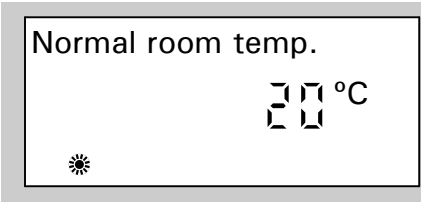
→ *Please note:*
The circulation pumps are switched on for a short time every 24 hours to prevent them from seizing up.

Standby operation
- No central heating
- No DHW supply

Selecting the heating program (winter, summer) Vitocontrol-S, VD2/CT3/CM2

In the "Central heating and domestic hot water" heating program, central heating takes place with alternating "normal room temperature" and "reduced room temperature" according to the selected time program.
You can set the required room temperature as follows:

To change the "normal room temperature" (day temperature)

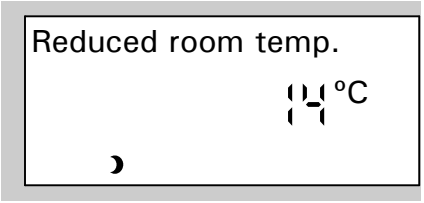


Factory setting:
20°C / 68°F from 06:00 to 22:00 hrs.
The "normal room temperature" can be set between 3 and 37°C / 37 and 99°F.

1. Press the heating circuit selector button; the button is illuminated.

2. Set the required temperature value with the "🌡☀" selector knob.
The display changes after a short time and shows the boiler sequence.

To change the "reduced room temperature" (night temperature)



Factory setting:
Frost protection 3°C / 37°F from 22:00 to 06:00 hrs.
The "reduced room temperature" can be set between 4 and 37°C / 39 and 99°F.

1. Open the hinged cover on the programming unit.

2. Press the heating circuit selector button; the button is illuminated.

3. Press ; the previous temperature setting flashes in the display window.

4. ⊕/⊖ Press the ⊕/⊖ button until the required temperature value appears.

5. OK Confirm by pressing OK; the temperature value stops flashing and is stored.
The display changes and shows boiler sequence.

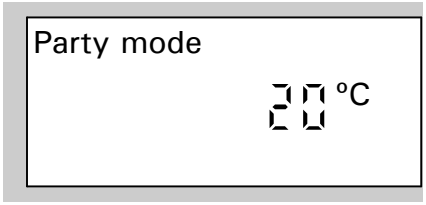
6. Close the hinged cover on the programming unit.

→ ***Please note:***
If the temperature value 3°C / 37°F is selected , "frost protection" appears in the display window.

Setting the party mode

Vitocontrol-S, VD2/CT3/CM2

*Switch on the party mode when you require **central heating** and **domestic hot water** (if a DHW tank is installed) for a short time independently of the preset heating and time program.*



To activate the party mode

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. Press ⚒; the button is illuminated, the party mode display appears in the display window and the party temperature value flashes. → *The light on the button turns off after approx. 1 minute. The party mode is still active.*
4. To change the party temperature: ⊕/⊖ Press the ⊕/⊖ button until the required temperature value appears.
5. OK Confirm by pressing OK; the temperature value stops flashing and is stored. The display changes and shows the boiler temperature.
6. Close the hinged cover on the programming unit.

To cancel the party mode

- The party mode is cancelled the next time the preset heating program switches automatically to central heating with the "normal room temperature".
- If you want to cancel the party mode immediately, press the heating circuit selector button and the ⚒ button again; the button is no longer illuminated.

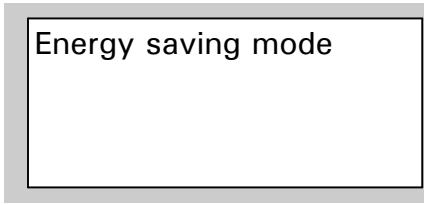
Activating the energy saving mode

Vitocontrol-S, VD2/CT3/CM2

The energy saving mode is only possible in the "🛏🚿" heating program. Switch on the energy saving mode when you require particularly economic central heating for a short time. In the energy saving mode the preset room temperature is automatically lowered.

To activate the energy saving mode

1. Press the heating circuit selector button; the button is illuminated.



2. Press ; the button is illuminated, the energy saving mode display appears in the display window for a short time.

→ *The light on the button turns off after approx. 1 minute. The energy saving mode is still active.*

To cancel the energy saving mode

- The energy saving mode is cancelled automatically the next time the preset heating program switches to central heating with the "reduced room temperature".
- If you want to cancel the energy saving mode immediately, press the heating circuit selector button and the button again; the button is no longer illuminated.

Starting up the heating system

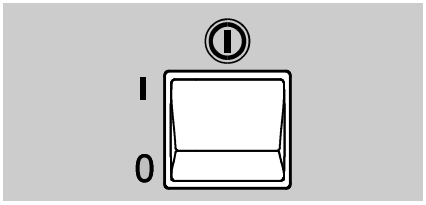
Vitocontrol-S, VD2/CT3/CM2

The initial start-up and matching of the control unit to local conditions and the structural characteristics of the building must be carried out by your heating contractor.

1. **Check** the pressure of the heating system on the manometer.
   If the needle is below the red marker, the system pressure is too low – in which case add more water or contact your heating contractor.

2. Open the shut-off valves in the oil pipes (at the boiler) or open the gas shut-off valve, whichever is applicable.

3. Switch on the power supply voltage, e.g. at the separate fuse or a power supply disconnect switch.



4. Switch on the heating system on/off switch "⏻"; the operating status is indicated by the green lamp and, after a short time, the boiler temperature appears in the display window.

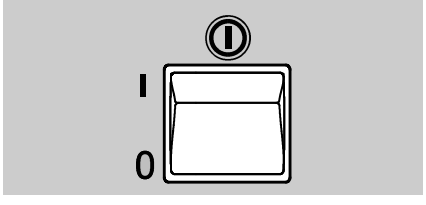
→ *Your heating system is installed and the remote controls are now ready for operation.*

Shutting down the heating system

Vitocontrol-S, VD2/CT3/CM2

*If you do not want to use your heating system **temporarily**, select **standby operation** on the Vitocontrol-S, VD2/CT3/CM2 (see "Selecting the heating program").*

*If you want to switch off only one boiler in the heating system, select **standby operation** on the corresponding Vitotronic 100, GC1.*
*If you do not want to use your heating system **for a long period** (several months), you should **shut down** the system.*
We advise you to contact your heating contractor before and after shutting down the heating system for long periods. Your heating contractor will take any necessary action, e.g. for frost protection of the system or to safeguard the heat exchange surfaces.



1. Switch off the heating system on/off switch "⏻" on all control units.

→ *The green lamp (operating status indicator) goes out.*

2. Close the shut-off valves in the oil pipes (at the tank and filter) or close the gas shut-off valve, whichever is applicable.

switched off. **There is no frost protection.**

3. Switch off the main power supply, e.g. at the separate fuse or a main electrical isolator switch. The power supply to the system is now

→ ***Please note:***
The settings of the control unit remain intact.

Changing the boiler water temperature — Vitotronic 100, GC1

In a multi-boiler system with the Vitocontrol-S, VD2/CT3/CM2, the boiler water temperature is determined by the Vitocontrol-S, VD2/CT3/CM2 for all boiler control units.
It is not possible to make the setting on the Vitotronic 100, GC1.

Selecting the time programs — Vitocontrol-S, VD2/CT3/CM2

You can select time programs for central heating, domestic hot water (if a DHW tank is installed) and the DHW re-circulation pump (if installed). The DHW re-circulation pump ensures that hot water is available at the taps when required.
A time program consists of 4 time phases, i.e.

- *The central heating can be switched up to 4 times per day to and fro between the "normal room temperature" and the "reduced room temperature".*
- *The domestic hot water supply and DHW re-circulation pump can be switched on and off up to 4 times per day.*

Time phase 1 is preset in the factory for all days of the week, i.e. during this time central heating takes place with the normal room temperature, domestic hot water heating takes place and the DHW re-circulation pump is switched on.

The following buttons are assigned to the time programs:

Button	Time program for	Factory setting
⏲🛏	central heating	normal room temperature: 6.00 to 22.00 hrs
⏲🚿	domestic hot water	ON: 5.30 to 22.00 hrs
⏲◠	DHW re-circulation pump	ON: 5.30 to 22.00 hrs

*You can set **identical** time programs for all days of the week or **individual** time programs for each day of the week.*

*When setting the time programs, please take into account the reaction time of the heating system. Therefore choose correspondingly **earlier** starting and finishing times.*

Selecting the time programs *(continued)*

Changing and scanning the time program for central heating

1. Open the hinged cover on the programming unit.

2. Press the heating circuit selector button; the button is illuminated.

3. Press ; the **"Central heating time program"** display appears in the display window.

→ *If you wish to exit the time program setting mode, press again.*

4. ⊕/⊖ Press ⊕/⊖ until one of the following displays appears in the display window:

- **"1-7"** if you wish to set identical time phases for all days of the week.

Time Prog. Central Htg.
1-7

or

- **Mo"**, **"Tu"** etc. if you wish to set different time phases for the displayed day of the week.

Time Prog. Central Htg.
Mo

→ ***Please note:***
*If different time phases are set for individual days of the week and you would like to set the same time phases for all days again, press OK when the display "**1-7**" is showing.* ***All*** *time phases are reset to their factory settings.*

5. OK Press OK to confirm; the display changes to **"Central heating time phase 1"**.

→ *Press ⊕ to skip a time phase.*

6. OK Press OK; the display changes to **"Central heating phase 1 ON"**.

7. ⊕/⊖ Press ⊕/⊖ until the required starting time of the central heating phase appears.

8. OK Press OK to confirm; the display changes to **"Central heating phase 1 OFF".**

9. ⊕/⊖ Press ⊕/⊖ until the required finishing time of the central heating phase appears.

10. OK Press OK to confirm; the display changes to **"Central heating phase 2 ON"**.

11. To set the start and end of central heating phases "2" to "4", follow the procedure described in points 7 to 10.

→ *After you have confirmed the finishing timer of central heating phase 4 with OK, the display changes and shows the boiler sequence.*

12. Close the hinged cover on the programming unit.

Selecting the time programs *(continued)* Vitocontrol-S, VD2/CT3/CM2

Changing and scanning the time program for central heating *(continued)*

To exit the setting mode at any time

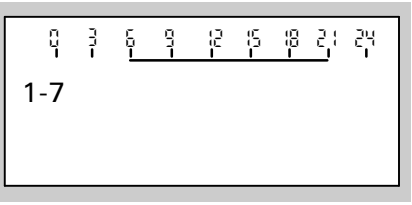
1. Press ⊙III; the display changes to **"Exit? Yes"**.
2. Press OK to confirm; the display changes and shows the boiler temperature.

To scan the time phases

Follow the procedure described on page 13, but without using the ⊕ and ⊖ buttons.

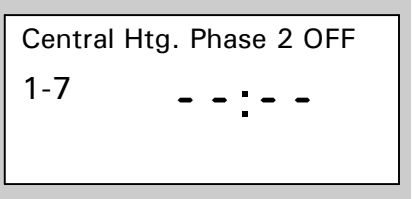
The time phases at a glance

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. Press ⊙III and ⓘ simultaneously; the preset time phases appear on a time slot graphic.
4. Close the hinged cover on the programming unit.



To erase the time phases

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. Press ⊙III; the **"Central heating time program"** display appears in the display window.
4. Press OK until the required **"Central heating phase OFF"** appears.
5. Press ⊖ until the display "– – : – –" appears for the finishing time.
6. Press OK to confirm until the display changes and shows the boiler temperature.
7. Close the hinged cover on the programming unit.



Selecting the time programs *(continued)* Vitocontrol-S, VD2/CT3/CM2

Changing and scanning the time program for domestic hot water heating and the DHW re-circulation pump

*The **automatic mode** is selected in the time program for domestic hot water and the DHW re-circulation pump, i.e. domestic hot water heating takes place in parallel with the central heating time program, but starts 30 minutes earlier. The DHW re-circulation pump runs parallel with the domestic hot water time program.*

*If you do not require the automatic mode, you can also set **individual** time programs.*
The following example shows the steps required for setting a time program for domestic hot water heating. Follow the same steps when setting the time program for the DHW re-circulation pump.

To select the automatic mode
(if required)

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. ⏲ Press ⏲; the **"DHW time program"** display appears in the display window.
4. ⊕/⊖ Press ⊕/⊖ for **"Automatic?"** if "Automatic?" is not already shown in the display window.
5. OK Press OK to confirm.

To set an individual time program

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. ⏲ Press ⏲; the **"DHW time program"** display appears in the display window. → *If you wish to exit the time program setting mode, press ⏲ again.*
4. ⊕ Press ⊕/⊖ for **"Individual?"** if "Individual?" is not already shown in the display window.
5. OK Press OK to confirm.

Selecting the time programs *(continued)* Vitocontrol-S, VD2/CT3/CM2

Changing and scanning the time program for domestic hot water heating and the DHW re-circulation pump *(continued)*

Time prog. DHW
1-7

Time prog. DHW
Mo

6. ⊕/⊖ Press ⊕/⊖ until one of the following displays appears in the display window:
- **"1-7"** if you wish to set identical time phases for all days of the week.

or
- **"Mo"**, **"Tu"** etc. if you wish to set different time phases for the displayed day of the week.

→ ***Please note:***
*If different time phases are set for individual days of the week and you would like to set the same time phases for all days again, press OK when the display **"1-7"** is showing. **All** time phases are reset to their factory settings.*

7. OK Press OK to confirm; the display changes to **"DHW time phase 1"**.

→ *Press ⊕ to skip a time phase.*

8. OK Press OK; the display changes to **"DHW phase 1 ON"**.

9. ⊕/⊖ Press ⊕/⊖ until the required starting time of the DHW phase appears.

10. OK Press OK to confirm; the display changes to **"DHW phase 1 OFF"**.

11. ⊕/⊖ Press ⊕/⊖ until the required finishing time of the DHW phase appears.

12. OK Press OK to confirm; the display changes to **"DHW phase 2 ON"**.

13. To set the start and end of DHW phases 2 to 4, follow the procedure described in points 9 to 12.

→ *After you have confirmed the last input with OK, the display changes and shows the boiler temperature.*

14. Close the hinged cover on the programming unit.

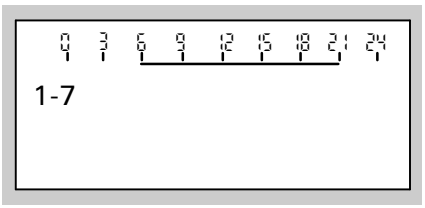
To exit the setting mode at any time

1. ⏲ Press ⏲; the display changes to **"Exit? Yes"**.

2. OK Press OK to confirm; the display changes and shows the boiler sequence.

Selecting the time programs *(continued)* Vitocontrol-S, VD2/CT3/CM2

Changing and scanning the time program for domestic hot water heating and the DHW re-circulation pump *(continued)*



To scan the time phases

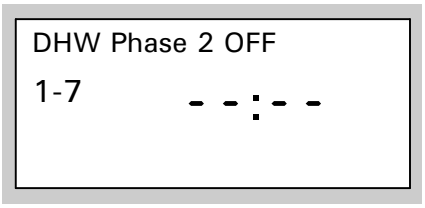
Follow the procedure described on page 15 and 16, but without using the ⊕ and ⊖ buttons.

The time phases at a glance

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. Press ⏲ and ⓘ simultaneously; the preset time phases appear on a time slot graphic.
4. Close the hinged cover on the programming unit.

To erase the time phases

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. Press ; the **"DHW time program"** display appears in the display window.
4. OK Press OK until the required **"DHW phase OFF"** appears.
5. ⊖ Press ⊖ until the display "– – : – –" appears for the finishing time.
6. OK Press OK to confirm until the display changes and shows the boiler temperature.
7. Close the hinged cover on the programming unit.

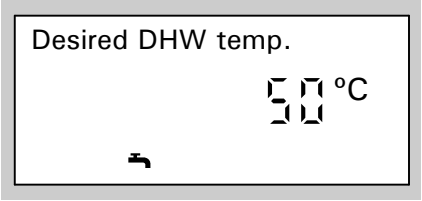


Domestic water heating on a one-off basis outside the programmed time phases

Press twice 2 to 3 seconds apart.

Changing the domestic hot water temperature — Vitocontrol-S, VD2/CT3/CM2

In a multi-boiler system the [🌡] Vitotronic 100, GC1 is without function. The domestic hot water temperature is set on the Vitocontrol-S, VD2/CT3/CM2.



1. Open the hinged cover on the programming unit.
2. [🌡] Press [🌡]; the previous temperature setting flashes in the display window.
3. ⊕/⊖ Press the ⊕/⊖ button until the required temperature value appears.
4. OK Confirm by pressing OK; the temperature value stops flashing and is stored. The display changes and shows the boiler temperature.
5. Close the hinged cover on the programming unit.

Setting the energy saving mode for the holiday period — Vitocontrol-S, VD2/CT3/CM2

If you want to set the heating system to the minimum energy consumption, e.g. while you are away on holiday, choose the holiday program or the standby mode.

Holiday program

- When the "🏢🚿" heating program is set, central heating takes place during the holiday program with the selected "reduced room temperature", but **without** domestic hot water heating.
  The preset time program for central heating and domestic hot water is active on the dates of your departure and return.
- When the "🚿" heating program is set, **only** frost protection of the heating system takes place during the holiday program. Domestic hot water takes place according to the preset heating program on the dates of your departure and return.

→ ***Please note:***
*The control unit is set up so that the holiday program is effective for **all** heating circuits.*
If you require this to be changed, please contact your heating contractor.

Setting the energy saving mode for the holiday period *(continued)* Vitocontrol-S, VD2/CT3/CM2

1. Open the cover on the programming unit.

2. Press the heating circuit selector button; the button is illuminated.

3. Press 💼; the **"Holiday program"** display appears in the display window.
→ *If you want to erase the holiday program during the setting procedure, press 💼 again and confirm "Erase? Yes" with OK.*

4. OK Press OK; the display changes to the **"Departure date"** (actual day of the week).

5. ⊕/⊖ Press ⊕/⊖ until the required departure date appears.

6. OK Press OK to confirm; the display changes to the **"Return date"** (the return date shown is the day following the entered departure date).

7. ⊕/⊖ Press ⊕/⊖ until the required return date appears.

8. OK Press OK to confirm; the display changes and shows the boiler temperature.

9. To set the temperature for the duration of the holiday program (only in the "🏠🚿" heating program):
   - Press 🌡.
   - Set the required value with the ⊕ or ⊖ button.
   - Confirm by pressing OK; the temperature value stops flashing and is stored.

→ *This temperature also applies to the reduced room temperature outside the holiday program.*

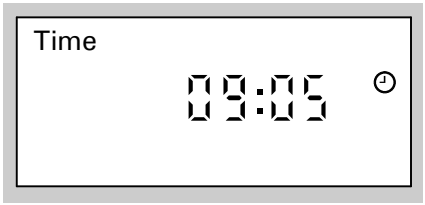
10. Close the hinged cover on the programming unit.

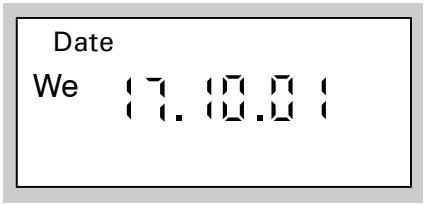
After the departure date, "Holiday program" and the actual date appear in the display window.
On the return date, the boiler temperature appears in the display window.
→ *If you want to cancel the holiday program before the selected return date, press 💼 again and confirm "Erase? Yes" with OK.*

Resetting the date and time

Vitocontrol-S, VD2/CT3/CM2

The time and date are preset in the factory and can be changed manually. There is no need for manual resetting in conjunction with a radio clock receiver (accessory).

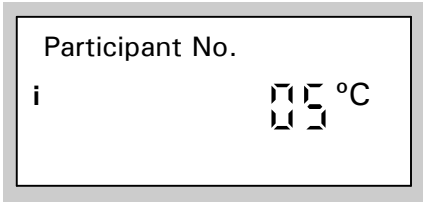


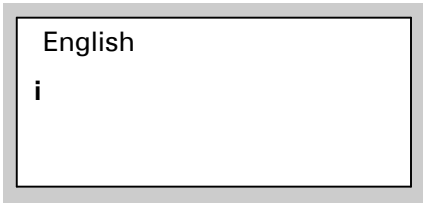


1. Open the hinged cover on the programming unit.
2. ⏲ Press ⏲; the **"Time"** appears in the display window.
3. ⊕/⊖ Press ⊕/⊖ until the required time appears.
4. OK Press OK to confirm; the display changes and shows the **"Date"**.
5. ⊕/⊖ Press ⊕/⊖ until the required date appears.
6. OK Press OK to confirm; the display changes and shows the boiler temperature.
7. Close the hinged cover on the programming unit.

Selecting the language

Vitocontrol-S, VD2/CT3/CM2

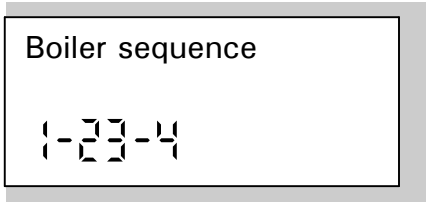




1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. ⓘ Press ⓘ; the **"Participant No."** appears in the display window.
4. ⊖ Press ⊖ until the required language appears.
5. OK Press OK to confirm; the display changes and shows the boiler temperature.
6. Close the hinged cover on the programming unit.

Boiler sequence selection control

Vitocontrol-S, VD2/CT3/CM2

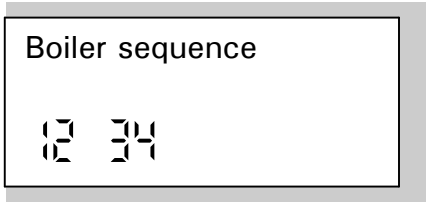


Actual boiler sequence

The digits shown in the basic display show the boiler numbers of the connected boilers in the current actual boiler sequence.

The hyphens between the boiler numbers indicate the status of each boiler.

- *The boilers in front of the first hyphen are those which are activated by the Vitocontrol-S, VD2/CT3/CM2.*
- *The boilers between the two hyphens are available for central heating purposes, but are not currently required.*
- *The boilers which are blocked (i.e. which are not available to the Vitocontrol-S, VD2/CT3/CM2 for generating heat, e.g. due to a fault) appear after the second hyphen.*



Alternative, operator-requested boiler sequence

The boiler sequence criteria (e.g. fixed lead boiler, last boiler) are set on the Vitocontrol-S, VD2/CT3/CM2 by your heating contractor during start-up of the heating system. Using the boiler sequence on the basis of all criteria, it is possible that
no alternative boiler sequence is available.

1. Open the hinged cover on the programming unit.

2. Press ⚙/🏠; for approx. 2 seconds; the alternative, operator-requested boiler sequence (shown without hyphens) appears in the display window.

3. ⊕/⊖ Press ⊕/⊖ until the required boiler sequence appears.

4. OK Press OK to confirm; the display changes and shows the actual boiler sequence.

→ ***Please note:***
The operator-requested boiler sequence does not have to correspond to the actual boiler sequence. The actual boiler sequence is dependent on various factors (e.g. faults) and the settings made by your heating contractor (e.g. temperature-dependent blocking).

5. Close the hinged cover on the programming unit.

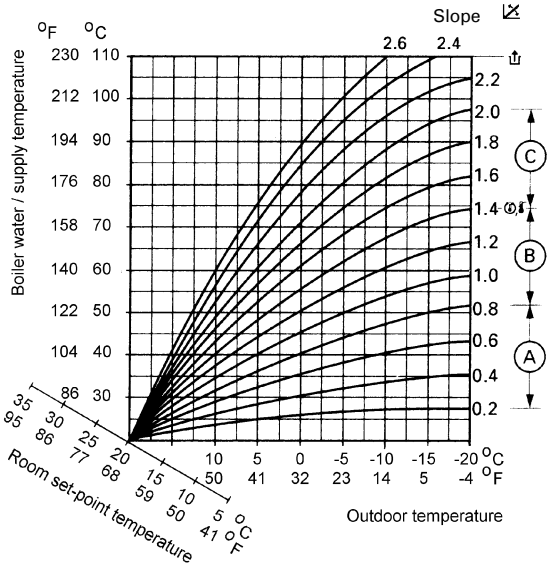
Changing the heating pattern

Vitocontrol-S, VD2/CT3/CM2

The heating pattern of the boiler is influenced by the outdoor temperature and the settings of the "shift" and "slope" of the "heating curve". Heating curves represent the relationship between the outdoor temperature and the boiler water or supply temperature. Put simply: the lower the outdoor temperature, the higher the boiler water or supply temperature.

You can change the setting of the heating curve if you establish, over a prolonged period during the heating season, that the room temperature does not meet your requirements.
Please observe the difference in the heating pattern over a sufficiently long period before altering the settings again.
Short-term changes in the room temperature are carried out with the "🌡☀" selector knob or with the "🌡☽" button.

Please note:
In the factory settings, the slope is set to 1.4 and the shift to 0.
The heating curves shown apply to the following settings:
- *"Shift of heating curve" = 0*
  With a different shift setting, the curves are shifted parallel in a vertical direction.
- *"Normal room temperature "☀" = approx. 20°C / 68°F.*

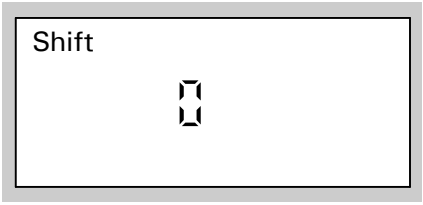


The slope of the heating curve is normally within the range marked
- Ⓐ for underfloor heating systems,
- Ⓑ for modulating heating systems,
- Ⓒ for heating systems with boiler water temperatures over 75°C / 167 °F.

→ ***Examples***
- *Well insulated house in protected position (radiator heating):*
  Slope = 1.2
- *House in exposed position or with old heating system (radiator heating):*
  Slope = 1.6

Changing the heating pattern

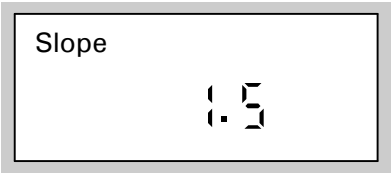
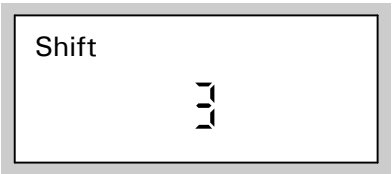
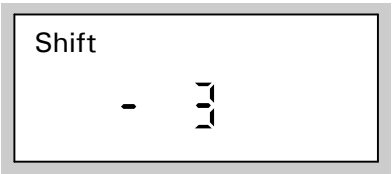
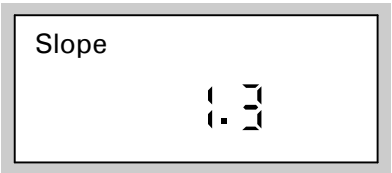
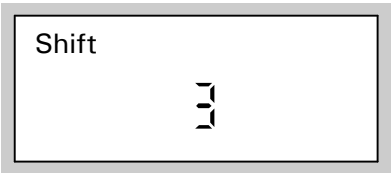
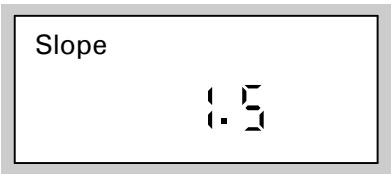
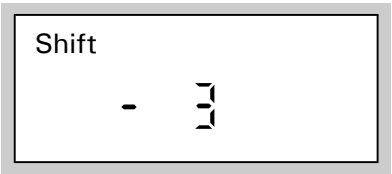
Vitocontrol-S, VD2/CT3/CM2



Changing the heating pattern

1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. Press ◿ for **"Slope"** or Press ◿ for **"Shift"**. → *As a guide, please refer to the table headed "Change heating pattern if..." on page 25.*
4. Press ⊕/⊖ until the required value is displayed.
5. Press OK to confirm; the display changes and shows the boiler temperature.
6. Close the hinged cover on the programming unit.

Changing the heating pattern *(continued)* — Vitocontrol-S, VD2/CT3/CM2

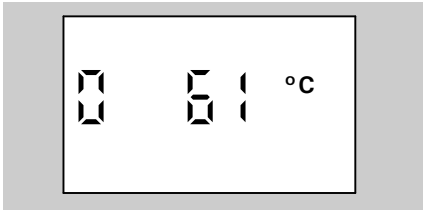
Change heating pattern if …	Action	Example
… **not enough** heat is generated in the **cold season**	Adjust the **slope** of the heating curve **upwards by one increment**	
… **too much** heat is generated in the **cold season**	Adjust the **slope** of the heating curve **downwards by one increment**	
… **not enough** heat is generated at **transitionary times** of the year and in the cold season	Adjust the **shift** of the heating curve to a **higher** value (e.g. + 3 K)	
… **too much** heat is generated at **transitionary times** of the year and in the cold season	Adjust the **shift** of the heating curve to a **lower** value (e.g. -3 K)	
… **not enough** heat is generated at **transitionary times** of the year but adequate in the cold season	Adjust the **slope** of the heating curve **downwards by one increment**, and the **shift** to a **higher** value (e.g. + 3 K).	 
… the boiler water temperature is **too high** at **transitionary times of the year**, but adequate in the cold season	Adjust the **slope** of the heating curve **upwards by one increment**, and the **shift** to a **lower** value (e.g. -3 K).	 

Scanning temperatures and operating status information

Vitotronic 100, GC1

You can scan various actual temperatures and operating status information depending on the system components connected:

Data displayed	Meaning	Please note
0 01	LON participant number	Equipment number within the LON system
3 65 °C	Boiler water temperature	––
6 45 °C	Return temperature at 17 A (1st return temperature sensor)	Only displayed if temperature sensor of Therm-Control or temperature sensor T1 connected
8 190 °C	Flue gas temperature	Only displayed if flue gas temperature sensor connected
9 50 °C	Return temperature at 17 B (2nd return temperature sensor)	Only displayed if temperature sensor T2 connected
▲ 03572 h	Burner hours run 1st stage	The hours run can be reset to "0" by pressing ⨞. The hours run displayed are approximate values only.
▲▲ 00572 h	Burner hours run 2nd stage	The hours run can be reset to "0" by pressing ⨞. The hours run displayed are approximate values only.
▲▲▲ 30417	Burner starts	The number of burner starts can be reset to "0" by pressing ⨞.



1. ⓘ Press ⓘ; the first temperature appears in the display window.

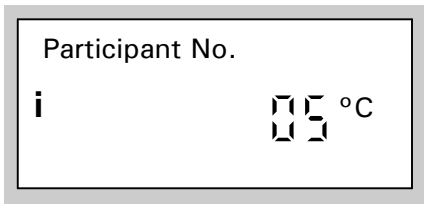
2. ⊕/⊖ Press ⊕/⊖ to scan other data (see table above).

3. OK Press OK to exit the scanning mode.
The display changes and shows the boiler water temperature.

Scanning temperatures and operating status information Vitocontrol-S, VD2/CT3/CM2

You can scan various actual temperatures and operating status information depending on the system components connected and the settings made.

- *Participant no.* → *Equipment number within the LON system*
- *Holiday program with dates of departure and return* → *if entered*
- *Holiday program active* → *if holiday program is activated*
- *Current Outdoor temperature*
- *Boiler sequence*
- *Common supply temperature* → *if sensor installed*
- *Current boiler temperature for each boiler (1-4)*
- *Flue gas temperature* → *if sensor installed*
- *Sensor* 17 A → *if sensor installed*
- *Sensor* 17 B → *if sensor installed*
- *Current domestic hot water temperature*
  - *DHW temperature 1* → *if 2 DHW tank temperature sensors are connected*
  - *DHW temperature 2*
- *Current supply temperature* → *for mixing valve circuit M2 and M3, if sensor connected*
- *Current room temperature for each heating circuit* → *if Vitotrol remote control installed*
- *Time*
- *Date*
- *Output 20 ON/OFF*
- *Output 29 ON/OFF*
- *Output 52 Open/Closed*
- *DHW pump ON/OFF*
- *DHW re-circulation pump ON/OFF*
- *Heating circuit pump ON/OFF*
- *Mixing valve Open/Closed*
- *Solar pump ON/OFF*
- *Solar pump run hours*
- *Various languages* → *The language required for permanent use in the display can be selected with the OK button.*



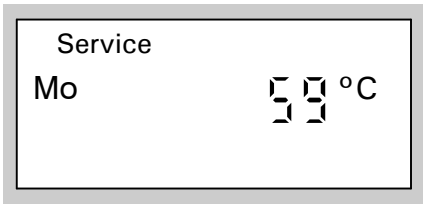
1. Open the hinged cover on the programming unit.
2. Press the heating circuit selector button; the button is illuminated.
3. ⓘ Press ⓘ; the **"Participant No."** appears in the display window.
4. ⊕/⊖ Press ⊕/⊖ to scan other data.
5. ⓘ Press ⓘ to exit the scanning mode.
   The display changes and shows the boiler temperature.
6. Close the hinged cover on the programming unit.

To scan the heating program, party or energy saving mode

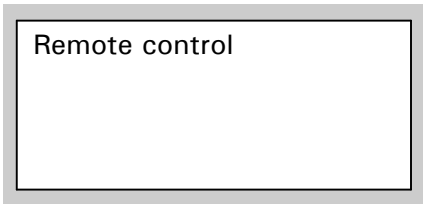
Press the heating circuit selector button;
The button on the active program is illuminated.

Special displays

Vitocontrol-S, VD2/CT3/CM2

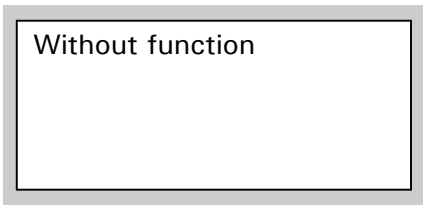


Please contact your heating contractor to arrange a service call.



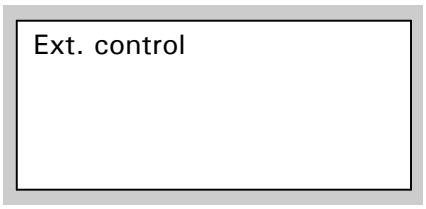
It is not possible to make settings on the control unit, only on the remote control.

→ ***Example***
"Normal room temperature" on the "🌡☀" selector knob can only be set on the remote control.

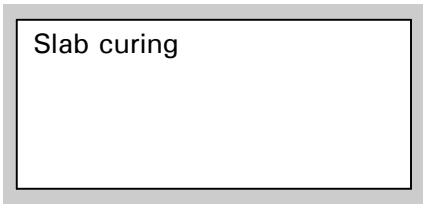


This display flashes when you have pressed a button to which no function is assigned.

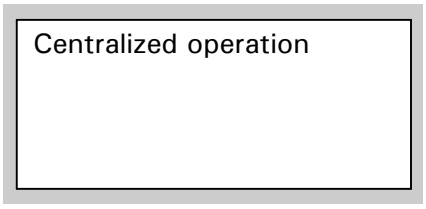
→ ***Example***
if no DHW tank is connected.



Changeover of the heating program
The heating program which is set on the control unit has been switched over by an external control.



If the slab curing function is coded, this display appears until the function is terminated.

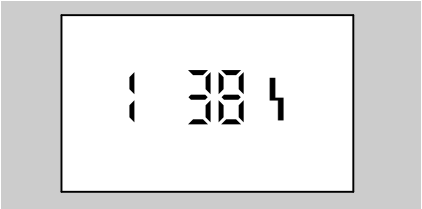


The setting of the heating and holiday program is accepted by the heating circuit for which "centralized operation" has been coded by your heating contractor.

Diagnosis and correction

Vitotronic 100, GC1

If a fault occurs on a boiler, it will be indicated in the display window and by the flashing red fault lamp.
In the display window you can read off the fault code yourself and inform your heating contractor accordingly.



1. ⊕/⊖ Press ⊕/⊖ to display the individual fault codes if several faults have occurred simultaneously.
2. OK Press OK to confirm; the display changes and shows the boiler temperature.

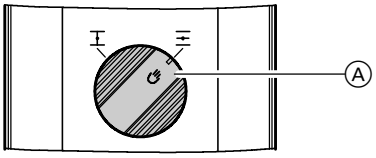
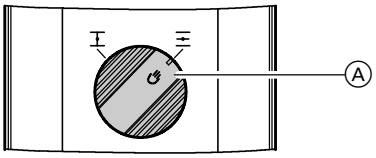
→ ***Please note:***
The fault message will re-appear on the following day if the fault is not corrected in the meantime. The red fault lamp continues to flash until the fault has been corrected.

To call up an acknowledged fault message

1. OK Press OK for approx. 2 seconds. → *The fault code is displayed.*
2. ⊕/⊖ Press ⊕/⊖ to display the individual fault codes if several faults have occurred simultaneously.

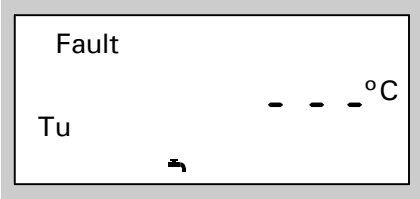
Fault	Cause	Remedy
The boiler does not start up	Heating system switch "⏻"	Switch on
	Electrical isolator switch, if installed, is switched off	Switch on electrical isolator switch
	Fuse in the domestic power circuit or in the control unit has blown or tripped	Inform heating contractor
	No heat request made via the Vitocontrol-S, VD2/CT3/CM2	Check the setting on the Vitocontrol-S, VD2/CT3/CM2

Diagnosis and correction

Burner does not switch on	Heating program "⏻" is set (the corresponding button is illuminated)	Set "🛁" heating program (page 10)
	Vitoair draught stabilizer defective (only on boilers with pressure jet burner)	Inform heating contractor. Change setting of Vitoair to manual operation: Press in rotary knob Ⓐ on motor and turn fully beyond setting "|↔|". 
	Failure of motor-controlled flue gas damper (only on gas boilers with atmospheric burner)	Inform heating contractor. Change setting of motor-controlled flue gas damper to manual operation: Press in rotary knob Ⓐ on motor and turn fully beyond setting "|↔|". 
	Fault on control unit	After consulting your heating contractor, the boiler can be operated temporarily with constant boiler water temperature by turning the emissions test switch "🧹" to "✋"; leave cover open.
	No fuel	Oil or LPG: Check fuel supply and re-order if necessary. Natural gas: Open gas-shut off valve or contact gas supply company if necessary.
Burner does not start; red fault indicator flashes on the control unit and red fault lamp is illuminated on the burner	Faulty start of burner	Make a new attempt to start by pressing the reset button ■ On the front of the burner hood with pressure jet burners, ■ On the front panel of the boiler with atmospheric burners. If the burner still fails to operate after pressing the reset button, check the points stated in the section headed "Starting up the heating system" and then press the reset button again. If the burner still fails to switch on, contact your heating contractor.
Fault symbol "ϟ" appears in the display window with flashing fault code	Fault on heating system	Make a note of the fault code and inform your heating contractor

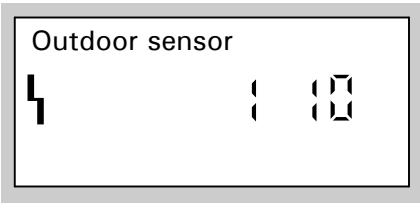
Diagnosis and correction

Vitocontrol-S, VD2/CT3/CM2



If a fault occurs on the heating system, it will be indicated in the display window and by the flashing red fault lamp.
Using the scan facility, you can read off the fault code yourself and inform your heating contractor accordingly.

1. Open the hinged cover on the programming unit.

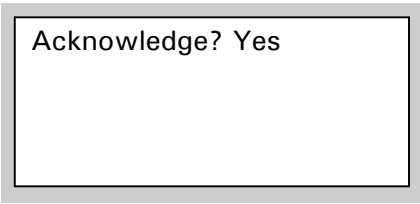


2. ⓘ Press ⓘ for fault search. The error source is displayed in plain language and in the form of a fault code. → ***Example***

- *Fault display*
- *Error number*
- *Sensor designation*
  ≙ *plug designation*
- *Open circuit*

or

- *Short circuit*



3. ⓞ Press ⓞ; the display changes to **"Acknowledge? Yes"**. → *Press "Acknowledge?" to confirm that you have noted the fault.*

Please note:
The fault message will re-appear at 7.00 hrs on the following day if the fault is not corrected in the meantime.
The red fault lamp continues to flash until the fault has been corrected.

4. ⊕/⊖ Press ⊕/⊖ for **"Yes"** or **"No"**.

5. ⓞ Press ⓞ to confirm; the display changes and shows the boiler temperature.

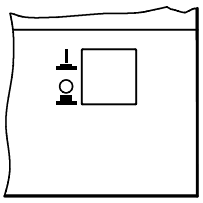
6. Close the hinged cover on the programming unit.

To call up an acknowledged fault message

1. ⓞ Press ⓞ for approx. 2 seconds. → *The fault is displayed.*

2. ⊕/⊖ Press ⊕/⊖ to display further faults. → *Only if two or more faults have occurred.*

Diagnosis and correction *(continued)* Vitocontrol-S, VD2/CT3/CM2

Fault	Cause	Remedy
Heating circuit does not start up	Heating system switch "⏻"	Switch on
	Power supply disconnect switch, if installed, is switched off	Switch on power supply disconnect switch
	Heating program "⏻" is set (corresponding button is illuminated)	Set "🛏" or "🚿" heating program (page 10)
	Fuse in the domestic power circuit or in the control unit has blown or tripped	Inform heating contractor
	Fault on control unit	After consulting your heating contractor, the boiler can be operated temporarily with constant boiler water temperature by turning the override switch "🔧" to "✋"; leave cover open
Burners are operating, but no hot water (only on systems with DHW tank)	Control unit incorrectly programmed or set	Check time program for domestic hot water heating, check domestic hot water temperature, and correct if necessary
	DHW tank temperature sensor or re-circulation pump for the DHW tank is defective	Inform heating contractor
The rooms are cold even though the burners are operating	Time incorrectly set	Set correct time
	Heating program "🚿" or "⏻" is set (corresponding button is illuminated)	Set heating program "🛏" (page 6)
	Operation with domestic hot water tank only: Domestic hot water supply has priority (🚿 in display window)	Wait until the domestic hot water tank has heated up (🚿 is turned off in the display window)
	On/off switch on the mixing valve motor is turned to OFF	Turn the on/off switch to I ON 
The room temperature is not high enough with a low outdoor temperature	Heating curve setting incorrect	Check and, if necessary, correct the heating curve setting
	Control unit incorrectly programmed or set	Check and, if necessary, correct the settings for the temperatures, the time program and the heating program

Diagnosis and correction *(continued)* Vitocontrol-S, VD2/CT3/CM2

Fault	Cause	Remedy
The rooms are cold during the day but warm at night	Time incorrectly set	Set correct time
	Control unit incorrectly programmed or set	Check and, if necessary, correct the settings for the temperatures , the time program and the heating program
"Fault" flashes in the display window	Fault on heating system	Make a note of the fault code and inform your heating contractor
"Without function" appears in the display window of the control unit	The button pressed has no function, e.g. ⏲🚿 if no DHW tank is connected	

Servicing
Servicing of heating systems is required under current heating system regulations and standards.

Regular servicing of the heating system will ensure troublefree, energy-saving and environmentally friendly heating. We strongly advise you to arrange a service contract with your heating contractor.

Operational checks
The following operational checks should be carried out every month:
- Regularly check the pressure of the system.
- Check correct operation of safety valve.
- Check correct operation of control equipment.
- Check all seals and re-seal if necessary.
- Check the ventilation facilities of the boiler room (see safety note on page 2).
- Check function of neutralizing unit.
- Check level of neutralizing agent.

Boiler
All boilers have to be cleaned at certain intervals as the flue gas temperature and therefore the energy loss rise as the level of contamination increases.

We recommend the use of a flue gas thermometer.
The flue gas temperature can be monitored with the flue gas temperature sensor which is available as an accessory. A flue gas temperature monitoring system will provide an indication of incorrect burner adjustment and the degree of contamination of the boiler.

The efficiency of the system will be impaired if the flue gas temperature is excessively high due to contamination of the boiler or incorrect adjustment of the burner. In this case it may be necessary to clean the boiler or readjust the burner.

A built-in hours run meter measures the operating times of the burner. The longer the operating times, the lower the standby losses.

Cleaning
The equipment can be cleaned with domestic cleaning agents available on the market (do not use abrasive cleaning agents).

Note on disposal of unwanted equipment
The unit contains an inbuilt, non-toxic battery.
To safeguard the environment, please dispose of spent batteries properly via the appropriate collection points.
The battery should be removed by a competent person.

Quick Reference

°C	°F
-40	-40
-35	-31
-25	-13
-20	-4
-18	0
-16	+3
-14	+7
-12	+10
-10	+14
-9	+16
-8	+18
-7	+19
-6	+21
-5	+23
-4	+25
-3	+27
-2	+28
-1	+30
0	+32
+1	+34
+2	+36
+3	+37
+4	+39
+5	+41
+6	+43
+7	+45
+8	+46
+9	+48
+10	+50
+12	+54
+14	+57
+16	+61
+18	+64
+20	+68
+25	+77
+30	+86
+35	+95
+40	+104
+50	+122
+60	+140
+70	+158
+80	+176
+90	+194
+100	+212
+110	+230

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